CLAIMS

1. A method of addressing a protocol data unit to a network construct on a communication network, the method comprising the steps of:

generating a protocol data unit that contains as an address at least one capability of the network construct; and

issuing the protocol data unit onto the communication network.

2. The method of claim 1, wherein the address is a destination address.

3. The method of claim 2, wherein the destination address is a destination Media Access Control (MAC) address.

4. The method of claim 1, wherein the network construct is a provider edge network element, and wherein the capability is specific to provider edge network elements.

5. The method of claim 1, wherein the network construct is a port of a particular type on a network element, and wherein the capability is specific to that type of port.

6. The method of claim 1, further comprising listening for a reply to the protocol data unit from the communication network.

7. The method of claim 6, wherein receipt of a reply indicates the presence of the network construct on the communication network.

8. A method of receiving a protocol data unit by a network construct on a communication network, the method comprising:

filtering protocol data units to identify protocol data units that contain as an address at least one capability;

receiving identified protocol data units.

9. The method of claim 8, wherein the at least one capability matches a capability of the network construct.

10. The method of claim 8, wherein the address is a destination address.

11. The method of claim 8, wherein the protocol data unit contains a source Media Access Control (MAC) address and a destination MAC address, and wherein the address is at least one of the source MAC address and the destination MAC address.

12. The method of claim 11, wherein the destination MAC address comprises:

a first field containing an Organizationally Unique Identifier (OUI) that identifies the protocol data unit to the network construct as containing a capability based address; and

a second field identifying the capability of the network construct to which the protocol data unit is addressed.

13. The method of claim 8, wherein the at least one capability matches a capability of the network construct, and the method further comprising the step of responding to the protocol data unit.

14. The method of claim 13, wherein the step of responding comprises generating a response protocol data unit and sending the response protocol data on the communication network.

15. A method of discovering the presence of a network construct with a first capability on a communication network, the method comprising the steps of:

flooding a protocol data unit addressed to the first capability on the communication network; and

listening for a response to the protocol data unit.

16. The method of claim 15, wherein the protocol data unit is an Operation Administration and Maintenance (OAM) packet in an OAM flow.

17. The method of claim 15, wherein the protocol data unit is a hello message.

18. The method of claim 15, wherein the step of flooding comprises at least one of broadcasting and multicasting to cause the protocol data unit to be forwarded throughout a domain on the communication network.

19. A network element, comprising:

control logic configured to enable the network element to receive capability addressed protocol data units.

20. The network element of claim 19, wherein the control logic is further configured to enable the network element to respond to capability addressed protocol data units.